# National Climatic Data Center

### DATA DOCUMENTATION

#### FOR

**DATA SET 1100 (DSI-1100)** 

Surface Marine Observations

August 21, 2003

National Climatic Data Center 151 Patton Ave. Asheville, NC 28801-5001 USA

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1. Abstract: This data file contains surface marine observational data obtained from numerous and varied sources. DSI-1100 was derived from a variety of punched card decks. Observations were obtained from Ship Logs, Ship Weather Reporting Forms, published Ship Observations, Automatic Observing Buoys, Teletype Reports and on cards purchased from several foreign Meteorological Services. The quality of instruments ranges from those found aboard a 19th century Whaling Ship to the most sophisticated electronic equipment used on today's ocean Weather Ships. Observer qualifications vary from Deck Hand to trained Meteorologist.

From this conglomeration, an effort was made to bring to the researcher of oceanic weather patterns and sea conditions, a common observational format, designed for use with modern electronic data processing equipment. The International Marine punched card (Deck 128), established in 1963, was used as the basic input format to this dataset.

Over 31 million Surface Marine observations are currently in this dataset. They are filed by  $10^{\circ}$  Mardsen Square, Year, Month without regard to individual deck number.

The major parameters that make up this file are ship position (latitude, longitude), wind direction (degrees to 10ths), wind speed (knots), visibility (coded), present and past weather (coded), sea level pressure (mb), dry bulb, wet bulb, dewpoint, sea surface temperature, air-sea temperature difference (Deg. C), total cloud amount (oktas), and wave and sea swell heights (1/2 meters) and periods (coded, seconds).

#### 2. Element Names and Definitions:

Tape	Element	Tape	Code Definition and Remarks	
Positions	Configuration			
01-03	Card Deck	000-999	Number of the punched card deck from	
	Number		which the observation came.	
04-06	10° Mardsen	001-936	Mardsen Square System	
	Square			
07-08	1° Mardsen Sub-Square	00-99	Mardsen Square System	
09	Quadrant	1-4	1=N Latitude and W Longitude	
			2=N Latitude and E Longitude	
			3=S Latitude and W Longitude	
			4=S Latitude and E Longitude	
10-12	Latitude 000-900 00.0° - 90.		00.0° - 90.0° North or South	
13-16	Longitude	ongitude 0000-1800 000.0° - 180.0° East		
17-20	Year	18xx-19xx	xx = Any Number	
21-22	Month	01-12	01 = January 07 = July	
			02 = February 08 = August	
			03 = March 09 = September	
			04 = April 10 = October	
			05 = May 11 = November	
			06 = June 12 = December	
23-24	Day	01-31	Day of the month	
25-26	Hour - GMT	00-23	0000 GMT - 2300 GMT	
27	Wind	Δ,0,1,2	$\Delta$ = 36 point scale	
	direction		0 = 32 point scale	
	indicator		1 = 16 of 36 point scale	

3:

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			2 = 16 of	32 point	scale	
28-29	Wind	00-36, 99	Direction			ind is
	indicator	·	blowing.			
			36Pt	32Pt	16 of	16 of
					36Pt	32Pt
			00=Calm	Calm	Calm	Calm
			01=005-	006-		
			014°	016°		
			02=015-	017-	012-	012-
			024°	028°	033°	034
			03=025-	029-		
			034°	039°		0.2.5
			04=035-	040-		035-
			044°	050°	0.2.4	056°
			05=045-	051- 061°	034-	
			054°	062-	056°	057-
			06=055- 64°	062- 073°		057- 079°
			07=065-	074-	057-	079
			074°	074- 084°	037- 078°	
			08=075-	085-	070	080-
			084°	095°		101°
			09=085-	096-	079-	101
			094°	106°	101°	
			10=095-	107-		102-
			104°	118°		124°
			11=105-	119-	102-	
			114°	129°	123°	
			12=115-	130-		125-
			124°	140°		136°
			13=125-	141-		
			134°	151°		
			14=135-	152-	124-	147-
			144°	163°	146°	169°
			15=145-	164-		
			154°	174°		1.50
			16=155-	175-	147-	170-
			164°	185°	168°	191°
			17=165-   174°	186- 196°		
			18=175-	197-	169-	192-
			184°	208°	191°	214°
30	Wind speed	Δ, 0	$\Delta = \text{Not me}$		± ±	
	indicator	_, ~	0 = Measur			
31-33	Wind speed	000-199	000 = Calm			
			001-199 =		) Knots	
34	Visibility	Δ, 0, 1	$\Delta$ = Not me			
	Indicator		0 = Measur			
			1= Fog pre	sent		
35-36	Visibility	90-99	Horizontal	visibil	ity at t	he surface
	_		in kilomet	ers.		
			90 = <0.05			
			91 = 0.05			
			92 = 0.2			
		1	1 2 2 0 2			

				Note: When visibility Indicator = 1, and visibility = 93, it means that fog was present and visibility was not reported.
			93 = 0.5 94 = 1 95 = 2 96 = 4 97 = 10 98 = 20 99 = 50 o	r more
37-38	Present weather	00-99	01 = cloubecoming 02 = stat 03 = Cloudevelopin 04 = Visi 05 = Haze 06 = Wide in the ai or near tobservati 07 = Dust or near tobservati dust whird duststorm 08 = Well sand whirs station dor at the no dustst 09 = Dust sight at at the st hour. 10 = Ligh yards or European 11 = Patc fog at th about 10 12 = More fog or ic deeper th 13 = Ligh heard. 14 = Prec reaching 15 = Prec reaching	spread dust in suspension r, not raised by wind, at he station at the time of on.  or sand raised by wind at he station at the time of on, but no well developed ls or sand whirls and no or sandstorm seen.  developed dust whirls or ls seen at or near the uring the preceding hour time of observation, but orm or sandstorm. storm or sandstorm within the time of observation, or ation during the preceding  t fog (visibility 1,100 more). Synonymous with term "mist". hes of shallow fog or ice e station, not deeper than

16 = Precipitation within sight, reaching the surface of the sea, near to, but not at the ship.
17 = Thunderstorm, but no precipitation at the time of observation.
18 = Squalls at or within sight of the ship during the preceding hour

or at the time of observation. 19 = Funnel cloud or waterspout at or within sight of the ship during the preceding hour or at the time of observation.

The following phenomena occurred at the ship during the preceding hour but not at the time of observation.

20 - Drizzle (not freezing) or snow grains

21 = Rain (not freezing)

22 = Snow

23 = Rain and snow or ice pellets, type (a)

24 = Freezing drizzle or freezing rain.

25 = Shower(s) of rain

26 = Showers of snow or of rain and snow.

27 = Shower(s) of hail (ice pellets, type (b), snow pellets), or of rain and hail (ice pellets, type (b), snow pellets).

28 = Fog or ice fog.

29 = Thunderstorms (with or without precipitation)

## Present weather codes 30-99 refer to phenomena occurring at the ship at time of observation.

30 = Slight or moderate duststorm or sandstorm or sandstorm has decreased during the preceding hour.

31 = Slight or moderate duststorm or sandstorm, no appreciable change during the preceding hour.

32 = Slight or moderate duststorm or sandstorm has begun or has increased during the preceding hour.

33 = Severe duststorm or sandstorm has decreased during the preceding hour.

34 = Severe duststorm or sandstorm, no appreciable change during the preceding hour.

35 = Severe duststorm or sandstormhas begun or has increased during the preceding hour. 36 = Slight or moderate drifting snow generally low (below eye level) less than 6 feet. 37 = Heavy drifting snow (below eye level) less than 6 feet. 38 = Slight or moderate blowing snow generally high (above eye level) 6 feet or more. 39 = Heavy blowing snow generally high (above eye level) 6 feet or more. 40 = Fog or ice fog at a distance at the time of observation, but not at the ship during the preceding hour, the fog or ice fog extending to a level above that of the observer. 41 = Fog or ice fog in patches. 42 = Fog or ice fog, sky visible hasbecome thinner during the preceding hour. 43 = Fog or ice fog, sky invisiblehas become thinner during the preceding hour. 44 = Fog or ice fog, sky visible noappreciable change during the preceding hour. 45 = Fog or ice fog, sky invisibleno appreciable change during the preceding hour. 46 = Fog or ice fog, sky visible hasbegun or become thicker during the preceding hour. 47 = Fog or ice fog, sky invisiblehas begun or become thicker during the preceding hour. 48 = Fog, depositing rime, sky visible. 49 = Fog, depositing rime, sky invisible. 50 = Drizzle, not freezing, intermittent slight at time of observation. 51 = Drizzle, not freezing, continuous slight at time of observation. 52 = Drizzle, not freezing, intermittent moderate at time of observation. 53 = Drizzle, not freezing, continuous moderate at time of observation. 54 = Drizzle, not freezing, intermittent heavy (dense) at time of observation.

55 = Drizzle, not freezing, continuous heavy (dense) at time of observation. 56 = Drizzle, freezing, slight. 57 = Drizzle, freezing, moderate or heavy (dense). 58 = Drizzle and rain, slight. 59 = Drizzle and rain, moderate or heavy. 60 = Rain, not freezing, intermittent, slight at time of observation. 61 = Rain, not freezing, continuous, slight at time of observation. 62 = Rain, not freezing, intermittent, moderate at time of observation. 63 = Rain, not freezing, continuous, moderate at time of observation. 64 = Rain, not freezing, intermittent, heavy at time of observation. 65 = Rain, not freezing, continuous, heavy at time of observation. 66 = Rain, freezing, slight. 67 = Rain, freezing, moderate or heavy. 68 = Rain or drizzle and snow,slight. 69 = Rain or drizzle and snow,moderate or heavy. 70 = Intermittent fall ofsnowflakes. 71 = Continuous fall of snowflakes slight at time of observation. 72 = Intermittent fall of snowflakes moderate at time of observation. 73 = Continuous fall of snowflakes moderate at time of observation. 74 = Intermittent fall of snowflakes heavy at time of observation. 75 = Continuous fall of snowflakes heavy at time of observation. 76 = Ice prisms (with or withoutfog). 77 = Snow grains (with or without fog). 78 = Isolated star like snow crystals (with or without fog). 79 = Ice pellets, type (a) (sleet, US definition) 80 = Rain shower(s), slight. 81 = Rain shower(s) moderate orheavy. 82 = Rain shower(s), violent. 83 = Shower(s) of rain and snow mixed, slight.

			<del>,</del> <del>,</del>
			84 = Shower(s) or rain and snow
			mixed, moderate or heavy.
			85 = Snow shower(s), slight.
			86 = Snow shower(s), moderate or
			heavy.
			87 = Slight showers of snow pellets
			or ice pellets, type (b), with or
			without rain or rain and snow mixed.
			88 = Moderate or heavy showers of
			snow pellets or ice pellets (b),
			with or without rain or rain and
			snow mixed.
			89 = Slight showers of hail with of
			without rain or rain and snow mixed,
			not associated with thunder.
			90 = Moderate of heavy showers of
			hail, with or without rain or rain
			and snow, slight mixed, not
			associated with thunder.
			91 = Slight rain at time of
			observation, thunderstorm during
			preceding hour but not at
			observation.
			92 = Moderate of heavy rain at time
			of observation, thunderstorm during
			preceding hour but not at
			observation.
			93 = Slight snow, or rain and snow
			mixed or hail, at time of
			observation with thunderstorm during
			the preceding hour but not at time
			of observation.
			94 = Moderate or heavy snow, or rain
			and snow mixed, or hail, at time of
			observation with thunderstorm during
			- I
			the preceding hour but not at time of observation.
			95 = Thunderstorm, slight or
			moderate, without hail, but with
			rain and/or snow at time of
			observation.
			96 = Thunderstorm, slight or
			moderate, with hail at time of
			observation.
			97 = Thunderstorm, heavy, without
			hail but with rain and/or snow at
			time of observation.
			98 = Thunderstorm combined with
			duststorm or sandstorm at time of
			observation.
			99 = Thunderstorm, heavy, with hail
			at time of observation.
39	Past weather	0-9	0 = Cloud covering ½ or less of the
			sky throughout the appropriate
			period.
		i	1 1
			1 = Cloud covering more than % of
			1 = Cloud covering more than ⅓ of the sky during part of the

			appropriate period and covering ½ or
			less during part of the period.
			2 = Cloud covering more than ½ of
			the sky throughout the appropriate
			period.
			3 = Sandstorm, duststorm or blowing
			snow.
			4 = Fog or ice fog or thick haze (US
			includes thick smoke).
			5 = Drizzle
			6 = Rain
			7 = Snow, or rain and snow mixed.
			8 = Shower
			9 = thunderstorm with or without
40.44		00000 1000	precipitation.
40-44	Sea level	08900-10700	890.0-1070.0 millibars
	pressure		
45	Temps	1,3,5	1 = tenths of degrees Celsius
	indicator		3 = whole degrees Celsius
			5 = half degrees Celsius
46-48	Air	±000-±999	±00.0-±99.9°C (always recorded to
10 10	temperature		tenths). The first position in the
10 E1			
49-51	Wet Bulb		field is the sign. Dew-point
52-54	temp		temperature is generally reported in
55-57	Dew Point		whole degrees. A zero is recorded in
	Sea Surface		the tenths position when dew-points
			are reported in whole degrees.
58-60	Air-sea Temp	±000-±999	00.0-99.9°C Air warmer than sea
	Diff.		
			00.0-99.9°C Sea warmer than air
61	Total cloud	0-9	00.0-99.9°C Sea warmer than air
61	Total cloud	0-9	Fraction of celestial dome covered
61	Total cloud amt. (N)	0-9	
61		0-9	Fraction of celestial dome covered by all clouds.
61		0-9	Fraction of celestial dome covered by all clouds.  0 = Clear
61		0-9	Fraction of celestial dome covered by all clouds.
61		0-9	Fraction of celestial dome covered by all clouds.  0 = Clear
61		0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas
61		0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount
	amt. (N)		Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.
61	amt. (N)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated. Fraction of celestial dome covered
	amt. (N)		Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl
	amt. (N)		Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction
	amt. (N)		Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds
	amt. (N)		Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud
	amt. (N)		Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).
	amt. (N)		Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud
62	Lower cloud amt. (Nh)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).
62	amt. (N)  Lower cloud amt. (Nh)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).  0 = No Stratocumulus, Stratus, Cumulus or Cumulonimbus.
62	Lower cloud amt. (Nh)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).  0 = No Stratocumulus, Stratus, Cumulus or Cumulonimbus. 1 = Cumulus with little vertical
62	Lower cloud amt. (Nh)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).  0 = No Stratocumulus, Stratus, Cumulus or Cumulonimbus. 1 = Cumulus with little vertical extent and seemingly flattened, or
62	Lower cloud amt. (Nh)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).  0 = No Stratocumulus, Stratus, Cumulus or Cumulonimbus. 1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than of bad
62	Lower cloud amt. (Nh)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).  0 = No Stratocumulus, Stratus, Cumulus or Cumulonimbus. 1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than of bad weather, or both.
62	Lower cloud amt. (Nh)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).  0 = No Stratocumulus, Stratus, Cumulus or Cumulonimbus. 1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than of bad weather, or both. 2 = Cumulus of moderate or strong
62	Lower cloud amt. (Nh)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).  0 = No Stratocumulus, Stratus, Cumulus or Cumulonimbus. 1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than of bad weather, or both. 2 = Cumulus of moderate or strong vertical extent, generally with
62	Lower cloud amt. (Nh)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).  0 = No Stratocumulus, Stratus, Cumulus or Cumulonimbus. 1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than of bad weather, or both. 2 = Cumulus of moderate or strong
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62	Lower cloud amt. (Nh)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).  0 = No Stratocumulus, Stratus, Cumulus or Cumulonimbus. 1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than of bad weather, or both. 2 = Cumulus of moderate or strong vertical extent, generally with protuberances in the form of domes or towers, either accompanied or not
62	Lower cloud amt. (Nh)	0-9	Fraction of celestial dome covered by all clouds.  0 = Clear 1 = 1 Okta or less, but not zero. 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated.  Fraction of celestial dome covered by all the Cl clouds and, if no Cl cloud is present, that fraction covered by all the Cm clouds present. See codes for Total Cloud Amt. (N).  0 = No Stratocumulus, Stratus, Cumulus or Cumulonimbus. 1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than of bad weather, or both. 2 = Cumulus of moderate or strong vertical extent, generally with protuberances in the form of domes

			at the same level.	
			3 = Cumulonimbus, the	
			which, at least parti	
			sharp outlines but ar	e neither
			clearly fibrous (cirr	iform) nor in
			the form of an anvil;	Cumulus,
			stratocumulus or Stra	tus may also be
			present.	
			4 = Stratocumulus for	med by the
			spreading out of Cumu	lus; Cumulus
			may also be present.	
			5 = Stratocumulus not	resulting form
			the spreading out of	Cumulus.
			6 = Stratus in a more	
			continuous sheet or l	
			ragged shreds, or bot	h, but no
			Stratus fractus of ba	
			7 = Stratus fractus o	
			(generally existing d	
			precipitation and a s	
			before and after) or	
			of bad weather, or bo	
			usually below Altostr	atus or
			Nimbostratus.	2
			8 = Cumulus and Strat	
			than that formed from	
			out of Cumulus; the b Cumulus is at a diffe	
			that of the Stratocumulus.	
			9 = Cumulonimbus, the upper part of which is clearly fibrous	
			(cirroform), often in the form of an	
			anvil; either accompanied or not by	
			Cumulonimbus without anvil or	
			fibrous upper part by Cumulus,	
			Stratocumulus, Stratus or pannus.	
			- = Stratocumulus, Stratus, Cumulus	
			and Cumulonimbus invisible owing to	
			darkness, fog, blowin	g dist or sand,
			or other similar phen	omena.
65	Cloud height	0-9, -	Height above sea surf	
	(h)		of the lowest cloud o	r fragment
			thereof.	
			Approximate Height	Height in
			in Feet	Meters
			0 = 0-149	0-49
			1 = 150-299	50-99
			2 = 300-599	100-199
			3 = 600-999	200-299
			4 = 1000-1999	300-599
			5 = 2000-3499	600-999
			6 = 3500-4999	1000-1499
			7 = 5000-6499	1500-1999
			8 = 6500-7999	2000-2499
			9 = >8000  or no	>2500 or no
	•	•		

•

type (Cm)    Nimbostratus	the greater part of cansparent; though as through ground the greater part of
type (Cm)    Nimbostratus. 1 = Altostratus which is semi-t this part of th weakly visible, glass. 2 = Altostratus which is suffic the son or moon 3 = Altocumulus which is semi-t various element only slowly and level.   4 = Patched (of almonds or fish the greater par transparent; th or more levels continually cha 5 = Semi-transp bands, or Altoc fairly continuo transparent or progressively i Altocumulus clo as a whole.   6 = Altocumulus spreading out or Cumulonimbus). 7 = Altocumulus layers, usually and not progres sky; or opaque	the greater part of cansparent; though e sun or moon may be as through ground
or Altocumulus Altostratus or 8 = Altocumulus the form of sma battlements; or the appearance 9 = Altocumulus generally at se - = Altocumulus Nimbostratus in darkness, fog, or other simila often because o	ently dense to hide or nimbostratus. the greater part of ansparent; the sof the cloud change are all at a single en in the form of ed) of Altocumulus, of which is semically considered and the element are aging in appearance. The altocumulus in an entry and the element are aging in one or more as layers (semipaque), avading sky, these ads generally thicken resulting from the Cumulus (or in two or more opaque in places, sively invading the ayer of Altocumulus, by invading the sky; together with simbostratus. With sproutings in a towers or Altocumulus having of cumuliform tufts. of a chaotic sky,
67 High cloud 0-9,- 0 = No Cirrus, Cirrostratus. 1 = Cirrus in to	

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68-69	Direction of waves	00-36, 49, 99	generally growing denser as a whole; the continuous veil extends more than 45 degrees above the horizon, without the sky being totally covered. 7 = Veil of Cirrostratus covering the celestial dome. 8 = Cirrostratus not progressively invading the sky and not completely covering the celestial dome. 9 = Cirrocumulus alone, or Cirrocumulus accompanied by cirrus or both, but Cirrocumulus is predominate. Cirrostratus, invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds = Cirrus, Cirrocumulus and Cirrostratus.  Direction from which waves come, in tens of degrees.    00 = Calm	
			2 = Dense Cirrus, in patches or entangled sheaves, which usually do not increase and sometimes seem to be the remains of the upper part of a Cumulonimbus; or Cirrus with sproutings in the form of small turrets or battlements, or Cirrus having the appearance of cumuliform tufts.  3 = Dense Cirrus, often in the form of an anvil, being the remains of the upper parts of Cumulonimbus.  4 = Cirrus in the form of hooks or of filaments, or both, progressively invading the sky; they generally become denser as a whole.  5 = Cirrus (often in bands converging towards one point or two opposite points of the horizon) and Cirrostratus, or Cirrostratus alone; in either case, they are progressively invading the sky, and generally growing denser as a whole;	

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	T	T		
			$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	
			11 = 105-114°   30 = 295-304°   12 = 115-124°   31 = 305-314°	
			$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	
			13 - 123-134   32 - 313-324 14 = 135-144°   33 = 325-334°	
			15 = 145-154°   34 = 335-344°	
			16 = 155-164° 35 = 345-354°	
			17 = 165-174°   36 = 355-004°	
			18 = 175-184°	
			10 173 104	
			49 = Waves confused, direction	
			indeterminate (waves equal to or	
			less than 4 ¾ meters).	
			00 Marsa and Sanada di matica	
			99 = Waves confused, direction	
			indeterminate (waves greater than 4 % meters).	
			'4 meters).	
			For buoy data this field is average	
			wave direction.	
70	Period of	0-9, -	2 = 5 seconds or less	
	waves		3 = 6-7 seconds	
			4 = 8-9 seconds	
			5 = 10-11  seconds	
			6 = 12-13 seconds	
			7 = 14-15 seconds $8 = 16-17$ seconds	
			8 = 16-17 seconds $9 = 18-19$ seconds	
			0 = 20-21  seconds	
			1 = over 21 seconds	
			- = calm or period not determined	
			For buoy data this field is average	
71-72	Hadab - C	00-99	wave period.	
/1-/2	Height of waves	00-99	Height in ½ meter increments	
	waves		$00 = < \frac{1}{4} \text{ meter}$ $01-99 = \frac{1}{2} - 49 \frac{1}{2} \text{ meters}$	
			01 99 - 12 19 12 mccc13	
			For Buoy data this field is	
			significant wave height.	
73-74	Direction of	00-36, 49, 99	Same as Direction of waves	
7.5	swell	0.0	Garage Parked of II	
75	Period of swell	0-9, -	Same as Period of Waves prior to 1969.	
	SMETT		Beginning January 1, 1968, the code	
			for Period of swell is:	
			0 = 10 seconds	
			1 = 11 seconds	
			2 = 12 seconds	
			3 = 13 seconds	
			4 = 14 seconds	
			5 = 5 seconds or less	
			6 = 6 seconds 7 = 7 seconds	
<u> </u>			/ - / Seconds	

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		T	8 = 8 seconds	
			9 = 9 seconds	
			- = calm or period not determined	
76-77	Height of	00-99	Same as Height of waves	
, , , ,	swell	00 33	bame as neight of waves	
78-79	Ocean	ΔΔ, 01-26	Station No.	
	weather	,		
	station	Note: Other	A = 01 $N = 14$	
	number	configurations	B = 02 $O = 15$	
	(Used when	may appear in	C = 03 $P = 16$	
	Filed 031 =	this Field.	D = 04 $Q = 17$	
	2 or -2)	These were	E = 05 $R = 18$	
		used for	F = 06 $S = 19$	
		control and	G = 07 $T = 20$	
		edit	H = 08 $U = 21$	
		procedures and	I = 09 $V = 22$	
		have no valid	J = 10 $W = 23$	
		meaning to the	K = 11 $X = 24$	
		user.	L = 12 $Y = 25$	
			M = 13 $Z = 26$	
80	Card	∆, 0-5, ō	$\Delta$ = All card decks except 128	
	indicator		0 - 5 = Card deck 128. Codes are	
			World Meteorological Organization	
			codes effective at time of	
			observation.	
			$\bar{O}$ = Card deck 128. Observations	
			punched by US.	
81	OSV or ship	$\Delta$ , 0, 2, $^{-}$ 2, 4	$\Delta$ = Navy and Deck log observations	
	indicator		0 = Merchant ships	
			2 = OSV - off station	
			-2 = OSV - on station	
			4 = Lightship	
82	Additional	Δ, 1, 6, 8	$\Delta$ = No additional data	
	data		1 = Ice information follows	
	indicator		5 = Ship direction and speed and 3	
			hour pressure change follows	
			8 = Significant cloud information	
	100707077	22.00	follows	
WHEN	ADDITIONAL	DATA	INDICATOR = 1	
83	Type of ice	1-5	1 = Icing from ocean spray	
			2 = Icing from fog 3 = Icing from spray and fog	
			4 = Icing from rain	
			5 = Icing from spray and rain	
84-85	Ice	00-99	Ice thickness in centimeters	
04-03	thickness	00-99	TOC CHICKHESS IN CHICHMETERS	
86	Rate of ice	0-4	0 = Ice not building up	
	accretion	J 7	1 = Ice building up slowly	
	0001001011		2 = Ice building up rapidly	
			3 = Ice melting or breaking up	
			slowly	
			4 = Ice melting or breaking up	
			rapidly	
87-88	Blank		* *	
WHEN	ADDITIONAL	DATA	INDICATOR = 6	
	·	<u></u>	7 7	

83	Ship	0 -9	Ship's course (true	) made good
	direction	ů j	during the 3 hours	
			time of observation	
			0 = Ship hove to	5 = SW
			1 = NE	6 = W
			2 = E	7 = NW
			3 = SE	8 = N
			4 = S	9 = Unknown
84	Ship speed	0-9	Ship's average spee	
			during the 3 hours	
			time of observation	•
			Position to	1060.
			Prior to 0 = 0 Knots	5 = 21-25
			0 - 0 KHOUS	Xnots
			1 = 1-3 Knots	6 = 16-18
				Knots
			2 = 4-6  Knots	7 = 31-35
				Knots
			3 = 7-9 Knots	8 = 22-24
				Knots
			4 = 16-20  Knots	9 = >24 Knots
			Beginning Janu	
			0 = 0 Knots	5 = 21-25
				Knots
			1 = 1-5 Knots	6 = 26-30
			0 ( 10 )	Knots
			2 = 6-10  Knots	7 = 31-35 Knots
			3 = 11-15 Knots	8 = 36-40
			3 - 11-13 KHOUS	o - 36-40 Knots
			4 = 16-20 Knots	9 = >40 Knots
85	Barometric	0-8	0 = Increasing, the	
	tendency	0 0	atmospheric pressur	
			than 3 hours ago.	
			1 = Increasing, the	n steady; or
			increasing then inc	
			slowly; atmospheric	pressure now
			higher than 3 hours ago.	
			2 = Increasing (steadily or	
			unsteadily) atmosph	
			higher than 3 hours	
			3 = Decreasing or steady, then	
			increasing; or increasing then	
			increasing more rap	
			pressure now higher	chall 5 hours
			ago. 4 = Steady; atmosph	aric nrassura
			same as 3 hours ago	
			5 = Decreasing, the	
			atmospheric pressur	
			lower than 3 hours	
			6 = Decreasing, the	_
			decreasing then dec	
L	1		1	

86-88	Amount of pressure change	000-299	slowly; atmospheric pressure now lower than 3 hours ago. 7 = Decreasing (steadily or unsteadily) atmospheric pressure now lower than 3 hours ago. 8 = Steady or increasing, then decreasing; or decreasing then decreasing more rapidly; atmospheric pressure now lower than 3 hours ago. Amount of pressure change form 3 hours ago. (Tenths to millibars)  00.0 - 29.9 millibars
WHEN	ADDITIONAL	DATA	INDICATOR = 8
83	Significant cloud amount	0-9	Amount of individual cloud layer or mass.  0 = Clear 1 = 1 Okta or less, but not zero 2-8 = 2-8 Oktas 9 = Sky obscured or cloud amount cannot be estimated
84	Significant cloud type	0-9, -	Cloud genus  0 = Cirrus  1 = Cirrocumulus  2 = Cirrostratus  3 = Altocumulus  4 = Altostratus  5 = Nimbostratus  6 = Stratocumulus  7 = Stratus  8 = Cumulus  9 = Cumulonimbus  - = Cloud not visible owing to darkness, fog, duststorms, sandstorm, or other analogous phenomena.
85-86	Significant cloud height	00-50 56-99	Height of the base of the cloud layer or mass whose genus was reported in Field 045.  00 = <30 meters 01-50 = 30-1,500 meters in increments of 30 meters 56-80 = 1,800-9,000 meters in increments of 300 meters 81-88 = 10,500-21,000 meters in increments of 1,500 meters 89 = > 21,000 meters 90 = < 50 meters 91 = 50-100 meters 92 = 100-200 meters 93 = 200-300 meters 94 = 300-600 meters 95 = 600-1,000 meters 96 = 1,000-1,500 meters 97 = 1,500-2,000 meters

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07.00	Dlank		98 = 2,000-2,500 meters 99 = >2,500 meters or no clouds
87-88	Blank		
89	Ice indicator	+	Indicates that the sea ice group (C2KD1re) was entered on the original reporting form. This indicator was used only for Card Deck 128.
90-93	Ship number	±0001-±9999	Identifying number of individual ships.
94-140	Supplemental data fields		

3. Start Date: 18550622

4. Stop Date: 19791231

#### 5. Coverage:

a. Southernmost Latitude: 90° S. Latitude b. Northernmost Latitude: 90° N. Latitude c. Westernmost Longitude: 180° E. Longitude d. Easternmost Longitude: 180° W. Longitude

#### 6. How to Order Data:

Ask NCDC's Climate Services about the cost of obtaining this data set.

Phone: 828-271-4800 FAX: 828-271-4876

E-mail: NCDC.Orders@noaa.gov

#### 7. Archiving Data Center:

National Climatic Data Center Federal Building

151 Patton Avenue

Asheville, NC 28801-5001 Phone: (828) 271-4800.

#### 8. Technical Contact:

National Climatic Data Center

Federal Building 151 Patton Avenue

Asheville, NC 28801-5001 Phone: (828) 271-4800.

9. Known Uncorrected Problems: None.

#### 10. Quality Statement:

11. Essential Companion Datasets: None.

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: 18:

12. References: No information provided with original documentation.

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